

Notice of Allowability

Application No.

09/348,317

Examiner

CHAMELI C. DAS

Applicant(s)

YATES ET AL.

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 5/11/04.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☒ The drawings filed on 19 December 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 7/9/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

BEST AVAILABLE COPY

1. This action is in response to the amendment filed on 5/11/04.
2. Preliminary amendment filed on 12/5/2000 has entered.
3. Formal drawings filed on 12/9/2000 have entered.
4. Claim 35 has been added.
5. In view of applicant's argument the rejection of claims 6-12 made in the earlier office action is hereby withdrawn.
6. Claims 1-35 have been allowed.

EXAMINER'S AMENDMENT

7. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. David Boundy, applicant's attorney on 7/9/04.

The application has been amended as follows:

- (i) In the specification, the abstract has been replaced by the following abstract.

-- An instruction processor to execute two instruction sets. Instructions are stored in different virtual memory pages of a single address space, and are coded for computers of two different instruction sets, and use of two different calling conventions. The instruction processor interprets instructions under, alternately, the first or second instruction set as directed by a first flag stored in table entries corresponding to memory pages for the instructions. The processor recognizes when program execution has transferred from a page of instructions using the first

Art Unit: 2122

data storage convention to a page of instructions using the second data storage convention, as indicated by a second flag stored in the table entries, and then adjusts a data storage content of the computer from the first storage convention to the second data storage convention. A history record provides a record of a classification of a recently-executed instruction. --

REASON FOR ALLOWANCE

8. The following is an examiner's statement of reason for allowance:

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, control-flow instruction of the instruction set being classified into a relatively small plurality of classes relative to the number of instruction opcodes executable by the instruction pipeline, most divisions in the classification being based on a static encoding of control-flow instructions executed, with at most minor divisions in the classification being based on dynamic or data-dependent execution behavior, as recited in the independent claim 1.

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, during execution of a program on a computer, as part of the execution of instructions of the instruction set, updating a record of the class of the classified control-flow instruction most recently executed, as recited in the independent claim 6.

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, a method before executing the destination instruction, reconfiguring the storage state of the computer to reestablish under the second execution context the logical state of the computer as interpreted under the first execution context, as recited in the independent claim 13.

BEST AVAILABLE COPY

Art Unit: 2122

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations, a storage register designed to store, and circuitry designed to record without software intervention into the storage register, a value reflecting the class, from among the encoding based classification, of an instruction recently executed by the pipeline, as recited in the independent claim 24.

Conclusion

9. The prior art made or record and not relied upon is considered pertinent to applicant's disclosure.

TITLE: Object code logic analysis and automated modification system and method, US 6071317

TITLE: Dynamic software system intrusion detection, US 6681331 B1.

TITLE: Method and apparatus for dynamically optimizing an executable computer program using input data, US 5966537 A.

TITLE: Emulation system that uses dynamic binary translation and permits the safe speculation of trapping operations, US 6631514 B1.

TITLE: Value Profiling, author: Calder et al, 1997, IEEE, 1997.

TITLE: Limits of Control Flow on Parallelism, author: Lam et al, ACM, 1992.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339.

The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 703-305-4552. The fax number for this group is (703) 872-9306.

BEST AVAILABLE COPY

Application/Control Number: 09/348,317

Page 5

Art Unit: 2122

An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-9600.

Chameli C. Das

**CHAMELI C. DAS
PRIMARY EXAMINER**

7/12/04

BEST AVAILABLE COPY